

Serial No. To be assigned
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Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

1. (currently amended) A chemical-mechanical polishing process for substrates used in the micro-electronics semiconductors industry ~~containing comprising~~ at least one metal layer and one insulator layer, separated, if necessary, by a barrier layer, in which the metal layer or layers and the barrier layer or layers are subjected to friction using a polishing pad by moving the substrate with respect to the pad and by pressing the substrate against the said pad, and an abrasive composition is deposited on the pad during the polishing, ~~characterized in that wherein~~ the said process is carried out in a single stage, ~~in that the~~ the said abrasive composition ~~comprises~~comprising:
 - an acid aqueous suspension of individualized particles of colloidal silica, not linked to each other by siloxane bonds, having a mean particle diameter of between 5 and 20 nm, and having a concentration by weight of silica of between 1 and 10%, and
 - an oxidizing agent,

and in that the metal layer and, if applicable, the barrier layer, is or are eliminated from the surface of the insulator in order to obtain a metal and insulator surface not requiring any finishing polishing.

2. (currently amended) A chemical-mechanical polishing process according to claim 1, ~~characterized in that wherein~~ the metal layer is produced from a metal selected from the group consisting of comprising aluminium aluminum, copper and tungsten, ~~preferably~~

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tungsten, and that the barrier layer is produced from a material selected from the group consisting of comprising titanium, tantalum, titanium nitride, tantalum nitride and any combination or alloy of at least two of them.

3. (currently amended) A chemical-mechanical polishing process according to claim 1 or 2, ~~characterized in that~~ wherein the insulator layer is selected from the group consisting of comprising silicon oxide, tetraethoxysilane oxide, phosphosilicate glass, borophosphosilicate glass and polymers with a low dielectric constant, ~~preferably from the group comprising silicon oxide, tetraethoxysilane oxide, phosphosilicate glass and borophosphosilicate glass.~~

4. (currently amended) A chemical-mechanical polishing process according to claim 1 ~~one of claims 1 to 3, characterized in that~~ wherein the oxidizing agent is an iodate, ~~preferably potassium iodate or sodium iodate and that the oxidizing agent is used at a concentration by weight of between 0.1 and 15%, preferably at a concentration by weight of between 2 and 5%.~~

5. (currently amended) A chemical-mechanical polishing process according to claim 1 ~~one of claims 1 to 4, characterized in that~~ wherein the mean diameter of the individualized particles of colloidal silica, not linked to each other by siloxane bonds, is between 7 and 15 nm, ~~preferably between 9 and 12 nm and that the acid aqueous suspension of colloidal silica is used at a concentration by weight of silica of between 2 and 5%.~~

6. (currently amended) A chemical-mechanical polishing process according to claim 1 ~~one of claims 1 to 5, characterized in that~~ wherein the acid aqueous suspension of colloidal silica is used at a pH of between 1 and 5, ~~preferably between 1.5 and 3.~~

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7. (currently amended) An abrasive composition for the chemical-mechanical polishing in one stage of substrates used in the microelectronics semiconductors industry containing at least one metal layer and one insulator layer, ~~characterized in that wherein~~ the said abrasive composition comprises:

- an acid aqueous suspension of individualized particles of colloidal silica, not linked to each other by siloxane bonds, having a mean particle diameter of between 5 and 20 nm, and having a concentration by weight of silica of between 1 and 10%, and
- an oxidizing agent,

and ~~in that it~~ the abrasive composition is substantially free of anti-corrosion agent (< 0.05 % by weight).

8. (currently amended) A composition according to claim 7, ~~characterized in that wherein~~ the oxidizing agent is an iodate, ~~preferably potassium iodate or sodium iodate, and that the oxidizing agent is present at a concentration by weight of between 0.1 and 15%, preferably between 2 and 5%.~~

9. (currently amended) A composition according to claim 7 or 8, ~~characterized in that wherein~~ the mean diameter of the individualized particles of colloidal silica, not linked to each other by siloxane bonds, is between 7 and 15 nm, ~~preferably between 9 and 12 nm.~~

10. (currently amended) A composition according to ~~claim 7 one of claims 7 to 9, characterized in that wherein~~ the acid aqueous suspension of colloidal silica has a concentration by weight of silica of between 2 and 5%, ~~and has a pH of between 1 and 5, preferably between 1.5 and 3.~~

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11. (new) A chemical-mechanical polishing process according to claim 4, wherein the iodate is selected from the group consisting of potassium iodate and sodium iodate.
12. (new) A chemical-mechanical polishing process according to claim 1, wherein the oxidizing agent is used at a concentration by weight of between 0.1 and 15%.
13. (new) A chemical-mechanical polishing process according to claim 12, wherein the oxidizing agent is used at a concentration by weight of between 2 and 5%.
14. (new) A chemical-mechanical polishing process according to claim 5, wherein the mean diameter of the individualized particles of colloidal silica, not linked to each other by siloxane bonds, is between 9 and 12 nm.
15. (new) A chemical-mechanical polishing process according to claim 1, wherein the acid aqueous suspension of colloidal silica is used at a concentration by weight of silica of between 2 and 5%.
16. (new) A chemical-mechanical polishing process according to claim 6, wherein the acid aqueous suspension of colloidal silica is used at a pH of between 1.5 and 3.
17. (new) A composition according to claim 8 wherein the iodate is selected from the group consisting of potassium iodate and sodium iodate.
18. (new) A composition according to claim 7 wherein the oxidizing agent is used at a concentration by weight of between 0.1 and 15%.

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19. (new) A composition according to claim 18, wherein the oxidizing agent is used at a concentration by weight of between 2 and 5%.
20. (new) A composition according to claim 9, wherein the mean diameter of the individualized particles of colloidal silica, not linked to each other by siloxane bonds, is between 9 and 12 nm.
21. (new) A composition according to claim 7 wherein the acid aqueous suspension of colloidal silica has a pH of between 1 and 5.
22. (new) A composition according to claim 21 wherein the acid aqueous suspension of colloidal silica has a pH of between 1.5 and 3.

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